



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,154	08/27/2004	Guangqiang Jiang	A382-USA	5153
24677	7590	05/09/2006		
ALFRED E. MANN FOUNDATION FOR SCIENTIFIC RESEARCH PO BOX 905 SANTA CLARITA, CA 91380			EXAMINER SPEER, TIMOTHY M	
			ART UNIT 1775	PAPER NUMBER

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/711,154

Applicant(s)

JIANG, GUANGQIANG

Examiner

Timothy M. Speer

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Applicant's Comments Regarding Information Disclosure Statement and Oath*

1. Regarding applicant's comments with respect to the IDSs, it is noted that the Examiner did not "date" the IDSs 10/05, but, rather, indicated that this was the date on which the IDSs were considered. Paragraph 5 of the Office Action date 11/18/05 lists the correct filing dates of the IDSs.
2. Applicant's comment regarding the oath (see the response under "Informal Comment"), are not understood, since the date of the oath according to PAIR is 08/27/04.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1-4, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert (*Surface Stabilization of Y-TZP*, British Ceramic Proceedings, 34, pp. 157-160, 1984) in view of Hida (USPN 5,192,720).

Schubert teaches articles comprising an yttria stabilized tetragonal zirconia polycrystal substrate and a coating of a stabilizing oxide formed on the surface thereof (see abstract, for instance). Regarding the recitation of the process limitation "ion beam assisted deposition," this limitation is being given no patentable weight, since an invention recited in a product-by-process claim is a product and not a process. The method by which a claimed product may be made is

Art Unit: 1775

not germane to patentability of the claimed product unless applicant demonstrates that the recited process step produces a materially different product. In the present case, no such evidence has been adduced. Since the products of Schubert were compacted to a final density of 98 % of theoretical and were fully cubic (page 158, second and third paragraphs), it is the Examiner's position that the coatings are "about 1.0 percent" porous, as presently claimed.

Additionally, Schubert teaches coatings having a grain size of 0.7 micron, within the claimed range of less than "about" 0.5 microns. Moreover, Schubert teaches that the coating layer has a thickness of 5 microns, within the presently claimed range of 1.6 to 10 microns.

Schubert teaches coating layers comprising "stabilizing oxides," i.e., stabilizing for zirconia, such as yttria, ceria, calcia and magnesia (abstract and page 158, last paragraph; "e.g.,  $\text{CeO}_2$ ,  $\text{MgO}$  and  $\text{CaO}$ " in reference to "stabilizing oxides" other than yttria). Hida teaches that alumina is a stabilizing oxide with respect to zirconia and is functionally equivalent to magnesia, ceria, calcia and yttria (col. 27, lines 1-4, for instance). Therefore, it would have been obvious to one having ordinary skill in the art to employ alumina in the coating layer of Schubert, since Schubert discloses that such layers should be formed of oxides that are stabilizing for zirconia, such as yttria, magnesia, ceria and calcia, and Hida teaches that alumina is functionally equivalent to yttria, magnesia, ceria and calcia with respect to stabilizing zirconia.

In view of the foregoing, it is the Examiner's position that claims 1-4 are prima facie obvious in view of the applied combination of references.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert in view of Hida as applied to claims 1-4 above, and further in view of Toibana (USPN 4,507,224).

Schubert in view of Hida was discussed above and fails explicitly to teach that the zirconia is stabilized with about 3% yttria. Toibana teaches that zirconia may be stabilized with 3% yttria (col. 5, lines 28-30). Therefore, it would have been obvious to one having ordinary skill in the art to employ about 3% yttria in the yttria stabilized zirconia of Schubert, since Toibana teaches that 3% yttria is effective to stabilize zirconia. Accordingly, instant claim 5 is considered to be prima facie obvious in view of the applied combination of references.

#### ***Double Patenting***

6. The double patenting rejection made in the Office Action date 11/18/05 at paragraph 10 is withdrawn in view of applicant's timely filed terminal disclaimer.

#### ***Response to Arguments***

7. Applicant's arguments filed 12/06/05 have been fully considered but they are not persuasive.

8. With respect to independent claim 1 and claims dependent thereon, applicant argues that the present claims distinguish over the applied prior art due to the recitation of the presently recited process limitation. Applicant asserts that the recited process step produces a product materially different than the prior art. Applicant has failed, however, to adduce evidence supporting these assertions and, accordingly, this argument is not persuasive.

9. Additionally, applied cites to *Atlantic Thermoplastic* for the proposition the "process terms in product-by-process claims served as limitation in determining infringement" (emphasis added, response at page 3). This is not persuasive, for, as applicant is well aware, in *Atlantic Thermoplastic*, the court was addressing product-by-process claims in the context of

infringement and NOT *ex parte* prosecution. Therefore, applicant's reliance on *Atlantic Thermoplastic* is misplaced and this argument is not persuasive.

10. Finally, applicant argues that the applied prior art does not teach a "layer" as presently claimed. This is not persuasive. Following processing as disclosed in the prior art, a layer is formed on the surface of the Y-TZP substrate.

11. In light of the above, applicant's arguments have been considered, but are not found to be persuasive.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M. Speer whose telephone number is 571-272-8385. The examiner can normally be reached on M-Th, M-F.

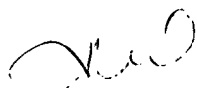
Art Unit: 1775

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Timothy M. Speer



JENNIFER C. MCNEIL  
SUPERVISORY PATENT EXAMINER  
5/1/04